

Analisis Kesulitan Siswa dalam Menyelesaikan Soal Cerita Matematika

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ABSTRAK

Matematika merupakan salah satu mata pelajaran wajib yang ada di setiap sekolah di Indonesia. Mata pelajaran ini merupakan salah satu mata pelajaran yang dianggap sulit oleh sebagian peserta didik. Di dalam matematika sendiri, terdapat berbagai bentuk materi dan bentuk soal yang dianggap sulit oleh peserta didik. Salah satu bentuk soal yang dianggap sulit oleh para peserta didik adalah soal cerita. Soal cerita merupakan suatu soal yang terbentuk dari rangkaian kata-kata atau kalimat yang panjang yang di dalamnya mengandung instruksi atau pertanyaan yang harus dipecahkan oleh setiap peserta didik. Soal cerita telah menjadi bagian dari kurikulum matematika untuk jangka waktu yang lama. Bentuk soal seperti ini dianggap sebagai salah satu langkah yang dapat digunakan untuk membantu para peserta didik untuk meningkatkan kemampuan matematis mereka. Meskipun dianggap sebagai bentuk soal yang paling sulit, para ahli mengatakan bahwa soal cerita dapat diselesaikan dengan menggunakan langkah pemecahan masalah Polya. Langkah pemecahan Polya merupakan empat langkah yang telah banyak digunakan sebagai salah satu solusi dalam menyelesaikan masalah dan juga digunakan dalam meningkatkan kemampuan pemecahan masalah peserta didik. Penelitian ini berupaya mengungkap kesulitan peserta didik dalam menyelesaikan soal cerita matematika. Penelitian ini juga berupaya untuk mengungkap kesulitan peserta didik dalam melaksanakan langkah pemecahan masalah Polya serta mengungkap faktor yang menyebabkan peserta didik mengalami kesulitan dalam menyelesaikan soal cerita matematika. Penelitian ini merupakan penelitian yang menggunakan desain penelitian kualitatif yang mengambil studi kasus sebagai jenis penelitian. Penelitian ini dilakukan di salah satu sekolah dasar di Kota Bandung, yaitu Sekolah Dasar Negeri 195 Isola Kota Bandung. Jumlah peserta didik yang menjadi partisipan di dalam penelitian ini adalah 32 peserta didik dengan 15 peserta didik perempuan dan 17 peserta didik laki-laki. Berdasarkan hasil penelitian ditemukan bahwa peserta didik mengalami kesulitan menyelesaikan soal cerita matematika pada, mengubah bahasa soal menjadi bahasa matematika, memahami konsep matematika, dan merepresentasikan soal ke representasi matematika. Peserta didik juga mengalami kesulitan dalam melaksanakan langkah pemecahan masalah, yaitu pada langkah pertama, langkah kedua, dan langkah keempat. Adapun faktor yang menyebabkan peserta didik mengalami kesulitan dalam menyelesaikan soal cerita, yaitu peserta didik kebingungan dalam mendapatkan informasi dari soal cerita, pemahaman konsep peserta didik yang kurang, peserta didik tidak terbiasa dengan langkah pemecahan masalah, dan peserta didik tidak mendapatkan pembelajaran yang menggunakan model atau metode yang tepat.

Kata Kunci: Pendidikan, Sekolah Dasar, Matematika, Kualitatif, Soal Cerita, Langkah Pemecahan Masalah.

ABSTRAK

Mathematics was one of the compulsory subjects in every school in Indonesia. This subject was one of the subjects that were considered difficult by some students. In mathematics itself, there were various forms of material and form of questions that were considered difficult by students. One form of question that was considered difficult by students was word problems. The word problems were a question formed from a series of words or long sentences which contained instructions or questions that must be solved by each student. Word problems have been part of the mathematics curriculum for a long time. The form of questions like this was considered as one of the steps that can be used to help students improve their mathematical abilities. Although it was considered the most difficult form of questioning, experts said that word problems can be solved using Polya's problem-solving steps. Polya's solving steps were four steps that have been widely used as a solution in solving problems and were also used in improving students' problem-solving abilities. This study sought to uncover the difficulties of students in solving mathematical word problems. This study also sought to reveal the difficulties of students in implementing Polya's problem-solving steps and to reveal the factors that caused students to experience difficulty in solving math word problems. This research was a research that used a qualitative research design that took case study as the type of research. This research was conducted in one of the elementary schools in Bandung, i.e. Elementary School 195 Isola, Bandung City. The number of students who participated in this study was 32 students with 15 female students and 17 male students. Based on the results of the study, it was found that students had difficulty solving word problems, namely changing the language of the questions to the language of mathematics, understanding mathematical concepts, and representing questions to mathematical representations. Students also experienced difficulties in implementing the problem-solving steps, namely in the first step, second step, and fourth step. The factors that caused students had difficulty to solve word problems, namely students were confused in getting information from story questions, students lacked understanding of concepts, students were not familiar with problem-solving steps, and students did not get learning using models or the right method.

Keyword: Education, Elementary Education, Mathematics, Qualitative, Word Problem, Problem Solving Steps

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DAFTAR PUSTAKA

- Adams-Hutcheson, G., & Longhurst, R. (2017). 'At Least in Person There Would Have Been a Cup of Tea': Interviewing Via Skype. *Area*, 49(2), 148–155. <https://doi.org/10.1111/area.12306>
- Agusfianuddin, Herman, T., & Turmudi. (2020). Identifying students' difficulties in mathematics word problem solving in elementary school. *International Journal of Advanced Science and Technology*, 29(7 Special Issue), 238–250. <http://sersc.org/journals/index.php/IJAST>
- Alacacı, C., & Doğruel, M. (2011). Solving a Stability Problem By Polya's Four Steps. *International Journal of Electronics Mechanical and Mechatronics Engineering*, 1(1), 19–28. <https://www.worldcat.org/>
- Alston, G. D., & Ellis-Hervey, N. (2015). Exploring The Non-Formal Adult Educator in Twenty- First Century Contexts Using Qualitative Video Data Analysis Techniques. *Learning, Media and Technology*, 40(4), 502–513. <https://doi.org/10.1080/17439884.2014.968168>
- Alvi, E., & Nausheen, M. (2019). Examining Grade 9 Students' Engagement in Mathematical Problem-Solving (MPS) When Working as Individuals and in A Small Group Setting. *Bulletin of Education and Research*, 41(1), 163–184. <http://pu.edu.pk/home/journal/32>
- Amalia, S. R. (2017). Analisis Kesalahan Berdasarkan Prosedur Newman Dalam Menyelesaikan Soal Cerita Ditinjau Dari Gaya Kognitif Mahasiswa. *AKSIOMA : Jurnal Matematika Dan Pendidikan Matematika*, 8(1), 17–30. <https://doi.org/10.26877/aks.v8i1.1505>
- Andersson, U. (2010). Skill Development in Different Components of Arithmetic and Basic Cognitive Functions: Findings From a 3-Year Longitudinal Study of Children With Different Types of Learning Difficulties. *Journal of Educational Psychology*, 102(1), 115–134. <https://doi.org/10.1037/a0016838>
- Anwar, R. B., & Rahmawati, D. (2017). Symbolic and Verbal Representation Process of Student in Solving Mathematics Problem Based Polya's Stages. *International Education Studies*, 10(10), 20–28. <https://doi.org/10.5539/ies.v10n10p20>
- Argarini, D. F. (2018). Analisis Pemecahan Masalah Berbasis Polya pada Materi Perkalian Vektor Ditinjau dari Gaya Belajar. *Jurnal Matematika Dan Pembelajaran*, 6(1), 91–99. <https://doi.org/10.33477/mp.v6i1.448>
- Asaloei, S. I., Wolomasi, A. K., & Werang, B. R. (2020). Work-Related Stress and Performance Among Primary School Teachers. *International Journal of Evaluation and Research in Education*, 9(2), 352–358. <https://doi.org/10.11591/ijere.v9i2.20335>
- Aslan, M., & Sağlam, M. (2017). Methodological Investigation of the Curriculum

- Evaluation Theses Completed between the Years 2006-2015 in Turkey. *Universal Journal of Educational Research*, 5(9), 1468–1478. <https://doi.org/10.13189/ujer.2017.050904>
- Ateş, H. K., & Yilmaz, P. (2018). Investigation of the Work Motivation Levels of Primary School Teachers □. *Journal of Education and Training Studies*, 6(3), 184–196. <https://doi.org/10.11114/jets.v6i3.2948>
- Awofala, A. O. A. (2012). An Analysis of the New 9-Year Basic Education Mathematics Curriculum in Nigeria. *Acta Didactica Napocensia*, 5(1), 17–28. <http://adn.teaching.ro>
- Ayu, N. S., & Rakhmawati, F. (2019). Analisis Kemampuan Siswa Menyelesaikan Soal Matematika Bentuk Cerita di Kelas VIII MTs. Negeri Bandar T.A. 2017/2018. *Axiom: Jurnal Pendidikan Dan Matematika*, 8(1), 82–95. <https://doi.org/10.3082/axiom.v8i1.5451>
- Balkar, B., Öztuzcu, R., & Akşab, Ş. (2019). Inferences on Turkish Education Policies in the Light of International Education Policy Studies following the Compulsory Education Reform. *Educational Considerations*, XLV(1). <https://doi.org/10.4148/0146-9282.2171>
- Banerjee, P. A. (2017). Is Informal Education the Answer to Increasing and Widening Participation in STEM Education? *Review of Education*, 5(2), 202–224. <https://doi.org/10.1002/rev3.3093>
- Barasa, L. (2020). Teacher Quality and Mathematics Performance in Primary Schools in Kenya. *African Journal of Research in Mathematics, Science and Technology Education*, 24(1), 53–64. <https://doi.org/10.1080/18117295.2020.1734164>
- Barış, Y., & Hasan, A. (2019). Teacher education in China, Japan and Turkey. *Educational Research and Reviews*, XIV(2), 51–55. <https://doi.org/10.5897/err2018.3661>
- Barnes, E. M., & Stephens, S. J. (2019). Supporting Mathematics Vocabulary Instruction Through Mathematics Curricula. *Curriculum Journal*, 30(3), 322–341. <https://doi.org/10.1080/09585176.2019.1614470>
- Bayuningsih, A. S., Usodo, B., & Subanti, S. (2017). Analysis of Junior High School Students' Problem-solving Ability Reviewed from Self-regulated Learning. *International Journal of Science and Applied Science: Conference Series*, 2(1), 51–59. <https://doi.org/10.20961/ijsascs.v2i1.16678>
- Biesta, G. (2015). What is education for? On Good education, teacher judgement, and educational professionalism. *European Journal of Education*, L(1), 75–87. <https://doi.org/10.1111/ejed.12109>
- Björn, P. M., Aunola, K., & Nurmi, J. E. (2016). Primary School Text Comprehension Predicts Mathematical Word Problem-Solving Skills in Secondary School. *Educational Psychology*, 36(2), 362–377. <https://doi.org/10.1080/01443410.2014.992392>

- Brandt, J., Lunt, J., & Meilstrup, G. R. (2016). Mathematicians' and Math Educators' Views on "Doing Mathematics." *Primus*, 26(8), 753–769. <https://doi.org/10.1080/10511970.2016.1166408>
- Brijlall, D. (2015). Exploring The Stages of Polya's Problem-solving Model during Collaborative Learning: A Case of Fractions. *International Journal of Educational Sciences*, 11(3), 291–299. <https://doi.org/10.1080/09751122.2015.11890401>
- Browder, D. M., Spooner, F., Lo, Y. Y., Saunders, A. F., Root, J. R., Ley Davis, L., & Brosh, C. R. (2018). Teaching Students With Moderate Intellectual Disability to Solve Word Problems. *Journal of Special Education*, 51(4), 222–235. <https://doi.org/10.1177/0022466917721236>
- Buck, B., & Longa, R. (2020). Make The Education of the Youths Our Own Education: Plato's Laches, A Dialogue for Educators. *Educational Theory*, 70(4), 199–213. <https://doi.org/10.1111/edth.12416>
- Cebero, M., Almudí, J. M., & Franco, Á. (2016). Design and Application of Interactive Simulations in Problem-Solving in University-Level Physics Education. *Journal of Science Education and Technology*, 25(4), 590–609. <https://doi.org/10.1007/s10956-016-9615-7>
- Çelik, H. C. (2017). Mathematical modelling research in Turkey: A content analysis study. *Educational Research and Reviews*, 12(1), 19–27. <https://doi.org/10.5897/err2016.3077>
- Çetinkaya, F. Ç., & Topçam, A. B. (2019). A Different Analysis with the Literature Circles: Teacher Candidates' Perspectives on the Profession. *International Journal of Education and Literacy Studies*, 7(4), 8–16. <https://doi.org/10.7575/aiac.ijels.v.7n.4p.8>
- Chadli, A., Tranvouez, E., Dahmani, Y., Bendella, F., & Belmabrouk, K. (2018). An Empirical Investigation into Students' Mathematical Word - Based Problem - Solving Process: A Computerized Approach. *Journal of Computer Assisted Learning*, 34(6), 928–938. <https://doi.org/10.1111/jcal.12301>
- Cheng, H. N. H., Yang, E. F. Y., Liao, C. C. Y., Chang, B., Huang, Y. C. Y., & Chan, T. W. (2015). Scaffold seeking: A reverse design of scaffolding in computer-supported word problem solving. *Journal of Educational Computing Research*, 53(3), 409–435. <https://doi.org/10.1177/0735633115601598>
- Cho, K. W., Neely, J. H., Crocco, S., & Vitrano, D. (2017). Testing enhances both encoding and retrieval for both tested and untested items. *Quarterly Journal of Experimental Psychology*, 70(7), 1211–1235. <https://doi.org/10.1080/17470218.2016.1175485>
- Chu, J., Rittle-johnson, B., & Fyfe, E. R. (2017). Diagrams Benefit Symbolic Problem-Solving. *British Journal of Educational Psychology*, 87(2), 273–287. <https://doi.org/10.1111/bjep.12149>
- Çiftçi, C., Memnun, D. S., & Aydın, B. (2019). Mental Images of Middle School

- Sixth and Eighth Grade Students about the Concept of Decimal Number i. *Universal Journal of Educational Research*, 7(1), 298–305. <https://doi.org/10.13189/ujer.2019.070138>
- Claessens, A., & Engel, M. (2013). How Important Is Where You Start? Early Mathematics Knowledge and Later School Success. *Teachers College Record*, 115(6), 1–29. <http://www.tcrecord.org>
- Cortina, J. L., Visnovska, J., & Zúñiga, C. (2014). Equipartition as a Didactical Obstacle in Fraction Instruction. *Acta Didactica Universitatis Comenianae Mathematics*, 1(14), 1–18. <https://espace.library.uq.edu.au/view/UQ:366073>
- Creswell, J. (2015). *Riset Pendidikan: Perencanaan, Pelaksanaan, dan Evaluasi Riset Kualitatif dan Kuantitatif* (5th ed.). Pustaka Pelajar.
- Csikós, C., & Szitányi, J. (2020). Teachers' pedagogical content knowledge in teaching word problem solving strategies. *ZDM - Mathematics Education*, 52(1), 165–178. <https://doi.org/10.1007/s11858-019-01115-y>
- Daroczy, G., Wolska, M., Meurers, W. D., & Nuerk, H. C. (2015). Word Problems: A Review of Linguistic and Numerical Factors Contributing to Their Difficulty. *Frontiers in Psychology*, 6(1), 1–13. <https://doi.org/10.3389/fpsyg.2015.00348>
- Delle Rose, V., San Mauro, L., & Sorbi, A. (2020). Word problems and Ceers. *Mathematical Logic Quarterly*, 66(3), 341–354. <https://doi.org/10.1002/malq.202000021>
- DeLucca, J. F., Peloquin, J. M., Smith, L. J., Wright, A. C., Vresilovic, E. J., & Elliott, D. M. (2016). MRI Quantification of Human Spine Cartilage Endplate Geometry: Comparison With Age, Degeneration, Level, and Disc Geometry. *Journal of Orthopaedic Research*, 34(8), 1410–1417. <https://doi.org/10.1002/jor.23315>
- Demiris, G., Oliver, D. P., Washington, K. T., & Berry, D. L. (2010). A Problem Solving Intervention for Hospice Caregivers: A Pilot Study. *Journal of Palliative Medicine*, 13(8), 1005–1011. <https://doi.org/10.1089/jpm.2010.0022>
- Dennis, M. S., Knight, J., & Jerman, O. (2016). Teaching High School Students With Learning Disabilities to Use Model Drawing Strategy to Solve Fraction and Percentage Word Problems. *Preventing School Failure*, 60(1), 10–21. <https://doi.org/10.1080/1045988X.2014.954514>
- Dewi, S. K., Suarjana, M., & Sumantri, M. (2014). Penerapan Model Polya untuk Meningkatkan Hasil. *Jurnal Mimbar PGSD Universitas Pendidikan Ganesha*, 2(1), 1–10. <https://doi.org/10.23887/jjpgsd.v2i1.2057>
- Docktor, J. L., & Mestre, J. P. (2014). Synthesis of discipline-based education research in physics. *Physical Review Special Topics-Physics Education Research*, 10(2), 1–58. <https://doi.org/10.1103/PhysRevSTPER.10.020119>
- Dolinka, I., Gray, R. D., & Ruč, N. (2017). On Regularity and The Word Problem

- for Free Idempotent Generated Semigroups. *Proceedings of the London Mathematical Society*, 114(3), 401–432. <https://doi.org/10.1112/plms.12011>
- Dolph, D. A. (2016). To Plan or Not to Plan, That Is the Question. *Journal of Cases in Educational Leadership*, 19(3), 100–109. <https://doi.org/10.1177/1555458916657124>
- Driver, M. K., & Powell, S. R. (2016). Culturally and Linguistically Responsive Schema Intervention: Improving Word Problem Solving for English Language Learners With Mathematics Difficulty. *Learning Disability Quarterly*, 40(1), 41–53. <https://doi.org/10.1177/0731948716646730>
- Dubey, A., Mehndiratta, A., Sagar, M., & Kashiramka, S. (2019). Reforms in Technical Education Sector: Evidence from World Bank-Assisted Technical Education Quality Improvement Programme in India. *Higher Education: The International Journal of Higher Education Research*, 78(2), 273–299. <https://doi.org/10.1007/s10734-018-0343-1>
- Dudung, A. (2018). Kompetensi Profesional Guru (Suatu Studi Meta-Analysis Desertasi Pascasarjana UNJ). *JKKP (Jurnal Kesejahteraan Keluarga Dan Pendidikan)*, 5(1), 9–19. <https://doi.org/10.21009/jkkp.051.02>
- Dwidarti, U., Mampouw, H. L., & Setyadi, D. (2019). Analisis Kesulitan Siswa dalam Menyelesaikan Soal Cerita pada Materi Himpunan. *Journal Cendekia: Jurnal Pendidikan Matematika*, 3(2), 315–322. <https://doi.org/10.31004/cendekia.v3i2.110>
- Edmonds-Wathen, C. (2019). Linguistic Methodologies for Investigating and Representing Multiple Languages in Mathematics Education Research. *Research in Mathematics Education*, 21(2), 119–134. <https://doi.org/10.1080/14794802.2019.1615981>
- Edwards, C. P., Hamel, E., Leeper Miller, J., & Ren, L. (2020). Improving Reflective Practice: A Documentation Rubric for Mentoring Preservice and In-Service Teachers. *Journal of Early Childhood Teacher Education*, 41(1), 2–17. <https://doi.org/10.1080/10901027.2018.1463321>
- Ellinger, A. D., & McWhorter, R. (2016). Qualitative Case Study Research as Empirical Inquiry. *International Journal of Adult Vocational Education and Technology*, 7(3), 1–13. <https://doi.org/10.4018/ijavet.2016070101>
- Elo, J., & Kurtén, B. (2020). Exploring Points of Contact Between Enterprise Education and Open-Ended Investigations in Science Education. *Education Inquiry*, 11(1), 18–35. <https://doi.org/10.1080/20004508.2019.1633903>
- Enright, E., Hogan, A., & Rossi, T. (2020). The Commercial School Heterarchy. *Discourse: Studies in the Cultural Politics of Education*, 41(2), 187–205. <https://doi.org/10.1080/01596306.2020.1722423>
- Fadhli, M. (2017). Manajemen Peningkatan Mutu Pendidikan. *TADBIR: Jurnal Studi Manajemen Pendidikan*, 1(2), 215–240. <https://doi.org/10.29240/jsmp.v1i2.295>

- Falomir, G. A. C. (2018). Diagramming and Algebraic Word Problem Solving for Secondary Students With Learning Disabilities. *Intervention in School and Clinic*, 54(4), 1–7. <https://doi.org/10.1177/1053451218782422>
- Felt, M. (2016). Social Media and The Social Sciences: How Researchers Employ Big Data Analytics. *Big Data and Society*, 3(1), 1–15. <https://doi.org/10.1177/2053951716645828>
- Ferdianto, F., & Hartinah, S. (2020). Analysis of the Difficulty of Students on Visualization Ability Mathematics Based on Learning Obstacles. *International Conference on Agriculture, Social Sciences, Education, Technology and Health (ICASSETH 2019)*, 429, 227–231. <https://doi.org/10.2991/assehr.k.200402.053>
- Fitriatien, S. R. (2019). Analisis Kesalahan Dalam Menyelesaikan Soal Cerita Matematika Berdasarkan Newman. *Jurnal Ilmiah Pendidikan Matematika (JIPMat)*, 4(1), 53 – 64. <https://doi.org/10.26877/jipmat.v4i1.3550>
- Flynn, S. V., Korcuska, J. S., Brady, N. V., & Hays, D. G. (2019). A 15-Year Content Analysis of Three Qualitative Research Traditions. *Counselor Education and Supervision*, 58(1), 49–63. <https://doi.org/10.1002/ceas.12123>
- Fuadiah, N. F., Suryadi, D., & Turmudi, T. (2017). Some Difficulties in Understanding Negative Numbers Faced by Students: A Qualitative Study Applied at Secondary Schools in Indonesia. *International Education Studies*, 10(1), 24–38. <https://doi.org/10.5539/ies.v10n1p24>
- Fuchs, L., Fuchs, D., Seethaler, P. M., & Barnes, M. A. (2020). Addressing The Role of Working Memory in Mathematical Word-Problem Solving When Designing Intervention for Struggling Learners. *ZDM: The International Journal on Mathematics Education*, 52(1), 87–96. <https://doi.org/10.1007/s11858-019-01070-8>
- Fuchs, L. S., Fuchs, D., Seethaler, P. M., & Craddock, C. (2020). Improving Language Comprehension to Enhance Word-Problem Solving. *Reading and Writing Quarterly*, 36(2), 142–156. <https://doi.org/10.1080/10573569.2019.1666760>
- Fuchs, L. S., Geary, D. C., Compton, D. L., Fuchs, D., Schatschneider, C., Hamlett, C. L., DeSelms, J., Seethaler, P. M., Wilson, J., Craddock, C. F., Bryant, J. D., Luther, K., & Chngas, P. (2013). Effects of First-Grade Number Knowledge Tutoring with Contrasting Forms of Practice. *Journal of Educational Psychology*, 105(1), 58–77. <https://doi.org/10.1037/a0030127>
- Gall, M. D., Gall, J. P., & Borg, W. R. (2010). *Applying Education Research: How to Read, Do, and Use Research* (6th ed.). Pearson.
- Goulet-Lyle, M. P., Voyer, D., & Verschaffel, L. (2020). How Does Imposing a Step-By-Step Solution Method Impact Students' Approach to Mathematical Word Problem Solving? *ZDM - Mathematics Education*, 52(1), 139–149. <https://doi.org/10.1007/s11858-019-01098-w>
- Griffin, C. C., Gagnon, J. C., Jossi, M. H., Ulrich, T. G., & Myers, J. A. (2018).

- Priming Mathematics Word Problem Structures in a Rural Elementary Classroom. *Rural Special Education Quarterly*, 37(3), 150–163. <https://doi.org/10.1177/8756870518772164>
- Gros, H., Thibaut, J. P., & Sander, E. (2020). Semantic Congruence in Arithmetic: A New Conceptual Model for Word Problem Solving. *Educational Psychologist*, 55(2), 69–87. <https://doi.org/10.1080/00461520.2019.1691004>
- Gunawan, A. (2016). Analisis Kesalahan dalam Menyelesaikan Soal Cerita pada Mata Pelajaran Matematika Siswa Kelas V SDN 59 Kota Bengkulu. *Jurnal PGSD: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 4(1). <https://doi.org/10.33369/pgsd.9.2.216-225>
- Günbaş, N. (2020). Students Solve Mathematics Word Problems in Animated Cartoons. *Malaysian Online Journal of Educational Technology*, 8(2), 43–57. <https://doi.org/10.17220/mojet.2020.04.004>
- Gürbüztürk, O. (2018). Investigation of Elementary Education Students ' Attitudes towards the Use of Smart Boards. *International Electronic Journal of Elementary Education*, 11(1), 55–61. <https://doi.org/10.26822/iejee.2018143961>
- Gürefe, N. (2018). Mathematical language skills of mathematics prospective teachers. *Universal Journal of Educational Research*, 6(4), 661–671. <https://doi.org/10.13189/ujer.2018.060410>
- Guttorp, P., & Lindgren, G. (2019). Why Distinguish Between Statistics and Mathematical Statistics—The Case of Swedish Academia. *International Statistical Review*, 87(1), 110–126. <https://doi.org/10.1111/insr.12275>
- Güzel Karpuz, E., & Özalan, N. U. (2020). Word Problem for Special Braid Groups. *Quaestiones Mathematicae*, 43(7), 931–957. <https://doi.org/10.2989/16073606.2019.1588178>
- Hacımeroglu, G. (2017). Reciprocal Relationships between Mathematics Anxiety and Attitude towards Mathematics in Elementary Students. *Acta Didactica Napocensia*, 10(3), 59–68. <https://doi.org/10.24193/adn.10.3.6>
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (2013). *Halliday's Introduction to Functional Grammar* (4th ed.). Routledge.
- Halmo, S. M., Sensibaugh, C. A., Bhatia, K. S., Howell, A., Ferryanto, E. P., Choe, B., Kehoe, K., Watson, M., & Lemons, P. P. (2018). Student difficulties during structure–function problem solving. *Biochemistry and Molecular Biology Education*, 46(5), 453–463. <https://doi.org/10.1002/bmb.21166>
- Harðarson, A. (2018). The Teacher Is A Learner: Dewey on Aims in Education. *Educational Philosophy and Theory*, 50(5), 538–547. <https://doi.org/10.1080/00131857.2017.1395735>
- Harding, S. E., Griffin, P. E., Awwal, N., & Scoular, C. (2017). Measuring Collaborative Problem Solving Using Mathematics-Based Tasks. *AERA Open*, 3(3), 1–19. <https://doi.org/10.1177/2332858417728046>

- Haryanti, M. D., Herman, T., & Prabawanto, S. (2019). Analysis of students' error in solving mathematical word problems in geometry. *Journal of Physics: Conference Series*, 1157(4), 1–6. <https://doi.org/10.1088/1742-6596/1157/4/042084>
- Heritin, A., Budiyo, & Slamet, I. (2016). Eksperimentasi Model Pembelajaran Tipe Numbered Head Together (NHT) Dan Think-Pair- Share (TPS) Ditinjau Dari Gaya Belajar Siswa Pada Pokok Bahasan Relasi Dan Fungsi Kelas Viii smp Negeri Se-Kabupaten. *Jurnal Elektronik Pembelajaran Matematika*, 4(6), 641–653. <http://jurnal.fkip.uns.ac.id>
- Hermanto, R., & Santika, S. (2017). Eksplorasi Epistemological dan Didactical Obstacle serta Hypothetical Learning Trajectory pada Pembelajaran Konsep Rarak. *Jurnal Penelitian Pendidikan Dan Pengajaran Matematika*, 3(2), 115–128. <https://doi.org/10.37058/jp3m.v3i2.382>
- Hertiavi, M. A., Langlang, H., & Khanafiyah, S. (2010). Penerapan Model Pembelajaran Kooperatif Tipe Jigsaw Untuk Peningkatan Kemampuan Pemecahan Masalah Siswa SMP. *Jurnal Pendidikan Fisika Indonesia*, 6(1), 53–57. <https://doi.org/10.15294/jpfi.v6i1.1104>
- Hesse, A., Glenna, L., Hinrichs, C., Chiles, R., & Sachs, C. (2019). Qualitative Research Ethics in the Big Data Era. *American Behavioral Scientist*, 63(5), 560–583. <https://doi.org/10.1177/0002764218805806>
- Hickendorff, M. (2013). The Language Factor in Elementary Mathematics Assessments: Computational Skills and Applied Problem Solving in a Multidimensional IRT Framework. *Applied Measurement in Education*, 26(4), 253–278. <https://doi.org/10.1080/08957347.2013.824451>
- Hoogland, K., Pepin, B., de Koning, J., Bakker, A., & Gravemeijer, K. (2018). Word Problems Versus Image-Rich Problems: An Analysis of Effects of Task Characteristics on Students' Performance on Contextual Mathematics Problems. *Research in Mathematics Education*, 20(1), 37–52. <https://doi.org/10.1080/14794802.2017.1413414>
- Hulaikah, M., Degeng, I. N. S., Sulton, & Murwani, F. D. (2020). The Effect of Experiential Learning and Adversity Quotient on Problem Solving Ability. *International Journal of Instruction*, 13(1), 869–884. <https://doi.org/10.29333/iji.2020.13156a>
- Hwang, W., Wati, S., Purba, D., Liu, Y., Zhang, Y., & Chen, N. (2018). An Investigation of the Effects of Measuring Authentic Contexts on Geometry Learning Achievement. *IEEE Transactions on Learning Technologies*, 12(3), 291–302. <https://doi.org/10.1109/TLT.2018.2853750>
- İbili, E. (2017). Internet Addiction Levels and Problem-Solving Skills in the Teaching Profession: An Investigation. *Acta Didactica Napocensia*, 10(4), 93–107. <https://doi.org/10.24193/adn.10.4.10>
- Ince, E. (2018). An Overview of Problem Solving Studies in Physics Education. *Journal of Education and Learning*, 7(4), 191–200.

<https://doi.org/10.5539/jel.v7n4p191>

- Indriyani, F., Nurcahyono, N. A., & Agustiani, N. (2018). Analisis Kemampuan Pemecahan Masalah Siswa Berdasarkan Langkah Ideal Problem Solving. *PYTHAGORAS: Jurnal Program Studi Pendidikan Matematika*, 7(2), 56–67. <https://doi.org/10.33373/pythagoras.v7i2.1296>
- Irwandi, S., Ufatin, N., & Sultoni. (2016). Peran Sekolah Dalam Menumbuhkembangkan Perilaku Hidup Sehat pada Siswa Sekolah Dasar (Studi Multi Situs di SD Negeri 6 Mataram dan SD Negeri 41 Mataram Kota Mataram Nusa Tenggara Barat). *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 1(3), 492–498. <https://doi.org/10.17977/jp.v1i3.6178>
- Jelatu, S., Sariyasa, & Ardana, I. M. (2018). Effect of GeoGebra - Aided REACT Strategy on Understanding of Geometry Concepts. *International Journal of Instruction*, 11(4), 325–336. <https://doi.org/10.12973/iji.2018.11421a>
- Jenner, B. M., & Myers, K. C. (2018). Intimacy, Rapport, and Exceptional Disclosure: A Comparison of In-Person and Mediated Interview Contexts. *International Journal of Social Research Methodology*, 22(2), 165–177. <https://doi.org/10.1080/13645579.2018.1512694>
- Jiang, Y., Zhang, J., & Xin, T. (2018). *Toward Education Quality Improvement in China : A Brief Overview of the National Assessment of Education Quality*. 44(6), 733–751. <https://doi.org/10.3102/1076998618809677>
- Johnson, E. L. (2018). A New Look at the Representations for Mathematical Concepts : Expanding on Lesh ' s Model of Representations of Mathematical Concepts. *Forum on Public Policy Online*, 2018(1), 1–11. <https://forumonpublicpolicy.com/journals-2/online-journals/volume-2018-no-2/>
- Jung, H., Stehr, E. M., & He, J. (2019). Mathematical Modeling Opportunities Reported by Secondary Mathematics Preservice Teachers and Instructors. *School Science and Mathematics*, 119(6), 353–365. <https://doi.org/10.1111/ssm.12359>
- Kadarisma, G., & Amelia, R. (2018). Epistemological Obstacles in Solving Equation of Straight Line Problems. *International Conference on Mathematics and Science Education of Universitas Pendidikan Indonesia*, 3, 905–910. <http://science.conference.upi.edu/proceeding/index.php/ICMScE/article/view/190>
- Kamarullah. (2017). Pendidikan Matematika Di Sekolah Kita. *Al Khawarizmi: Jurnal Pendidikan Dan Pembelajaran Matematika*, 1(1), 21–32. <https://jurnal.ar-raniry.ac.id/index.php/alkhawarizmi/index>
- Kaprinaputri, A. P. (2013). Kemampuan Menyelesaikan Soal Cerita Matematika. *Jiv*, 8(1), 10–15. <https://doi.org/10.21009/jiv.0801.2>
- Karakuyu, Y., & Can, Ö. (2020). Investigation of primary school teachers ' opinion about revised 3rd grade science curriculum in Turkey. *Educational Research and Reviews*, 15(4), 203–209. <https://doi.org/10.5897/ERR2019.3794>

- Kenedi, A. K., Helsa, Y., Ariani, Y., Zainil, M., & Hendri, S. (2019). Mathematical connection of elementary school students to solve mathematical problems. *Journal on Mathematics Education*, 10(1), 69–79. <https://doi.org/10.22342/jme.10.1.5416.69-80>
- Kingsdorf, S., & Krawec, J. (2016). Assessing A Multi-Component Math Intervention Within A Cognitive-Behavioral Framework on The Word Problem-Solving Responses of A Diverse Group of Third Graders. *Cogent Education*, 3(1), 1–26. <https://doi.org/10.1080/2331186X.2016.1160638>
- Knauf, H. (2020). Documentation Strategies: Pedagogical Documentation from the Perspective of Early Childhood Teachers in New Zealand and Germany. *Early Childhood Education Journal*, 48(1), 11–19. <https://doi.org/10.1007/s10643-019-00979-9>
- Kong, J. E., & Orosco, M. J. (2016). Word-Problem-Solving Strategy for Minority Students at Risk for Math Difficulties. *Learning Disability Quarterly*, 39(3), 171–181. <https://doi.org/10.1177/0731948715607347>
- Kundu, A. (2018). Blended Learning in Indian Elementary Education: Problems and Prospects. *Journal of Online Learning Research*, 4(2), 199–227. <https://eric.ed.gov/?id=EJ1184993>
- Kunene, N., & Sepeng, P. (2017). Rural Learners' Views and Perceptions about Their Experiences in Word Problem Solving. *Journal of Social Sciences*, 50(1–3), 133–140. <https://doi.org/10.1080/09718923.2017.1311728>
- Kurniawan, H., Putri, R. I. I., & Hartono, Y. (2018). Developing Open-Ended Questions for Surface Area and Volume of Beam. *Journal on Mathematics Education*, 9(1), 157–168. <https://doi.org/10.22342/jme.9.1.4640.157-168>
- Latif, S., & Akib, I. (2016). Mathematical Connection Ability in Solving Mathematics Problem Based on Initial Abilities of Students At Smpn 10 Bulukumba. *Jurnal Daya Matematis*, IV(2), 207–217. <https://doi.org/10.26858/jds.v4i2.2899>
- Layn, R., & Kahar, S. (2017). Jurnal Math Educator Nusantara (JMEN) Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Matematika. *Jurnal Math Educator Nusantara (JMEN)*, 3(2), 59–145. <https://doi.org/10.29407/jmen.v3i2.855>
- Lestari, N. I., Noornia, A., & Rahayu, W. (2010). Analisis Kemampuan Siswa SD dalam Menerjemahkan Soal Cerita ke dalam Model Matematika dan Penyelesaiannya. *Jurnal Matematika, Aplikasi Dan Pembelajarannya*, 9(1), 22–34. <https://library.unej.ac.id/>
- Li, R., Huang, Q., Zhang, D., Zhu, X., Shan, J., & Wang, J. (2020). An Aging Theory-Based Mathematic Model for Estimating the Wax Content of Wax Deposits Using the Fick's Second Law. *AIChE Journal*, 66(4), 1–13. <https://doi.org/10.1002/aic.16892>
- Lim, W., Son, J. W., & Kim, D. J. (2018). Understanding Preservice Teacher Skills to Construct Lesson Plans. *International Journal of Science and Mathematics*

- Education*, 16(3), 519–538. <https://doi.org/10.1007/s10763-016-9783-1>
- Lin, K. Y., & Williams, P. J. (2017). Two-Stage Hands-On Technology Activity to Develop Preservice Teachers' Competency in Applying Science and Mathematics Concepts. *International Journal of Technology and Design Education*, 27(1), 89–105. <https://doi.org/10.1007/s10798-015-9340-1>
- Lopez, C. J., & Mason, E. C. M. (2017). School Counselors as Curricular Leaders: A Content Analysis of ASCA Lesson Plans. *Professional School Counseling*, 21(1b), 1–12. <https://doi.org/10.1177/2156759x18773277>
- Machaba, F., & Du Plooy, M. (2019). Mathematics and Mathematical Literacy on the Career Podium–Sharing Gold? *African Journal of Research in Mathematics, Science and Technology Education*, 23(3), 363–375. <https://doi.org/10.1080/18117295.2019.1694782>
- Machaba, F., & Mwakapenda, W. (2016). Learners' Approaches to Solving Mathematical Tasks: Does Specialisation Matter? *Africa Education Review*, 13(3–4), 172–190. <https://doi.org/10.1080/18146627.2016.1224559>
- Mädamürk, K., Kikas, E., & Palu, A. (2018). Calculation and word problem-solving skill profiles: relationship to previous skills and interest. *Educational Psychology*, 38(10), 1239–1254. <https://doi.org/10.1080/01443410.2018.1495830>
- Magfirah, M., Maidiyah, E., & Suryawati, S. (2019). Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Matematika Berdasarkan Prosedur Newman. *Lentera Sriwijaya : Jurnal Ilmiah Pendidikan Matematika*, 1(2), 1–12. <https://doi.org/10.36706/jls.v1i2.9707>
- Mahmuda, R. (2015). Persepsi Guru Dalam Merancang RPP Kurikulum 2013. *E-JUPEKhu*, 4(3), 391–402. <http://ejournal.unp.ac.id/index.php/jupekhu>
- Main, L. F., Delcourt, M. A. B., & Treffinger, D. J. (2019). Effects of Group Training in Problem-Solving Style on Future Problem-Solving Performance. *Journal of Creative Behavior*, 53(3), 274–285. <https://doi.org/10.1002/jocb.176>
- Mammarella, I. C., Caviola, S., Giofrè, D., & Szűcs, D. (2018). The Underlying Structure of Visuospatial Working Memory in Children with Mathematical Learning Disability. *British Journal of Developmental Psychology*, 36(2), 220–235. <https://doi.org/10.1111/bjdp.12202>
- Marabini, A., & Moretti, L. (2020). Goldman and Siegel on the Epistemic Aims of Education. *Journal of Philosophy of Education*, 54(3), 492–506. <https://doi.org/10.1111/1467-9752.12398>
- Martín-Fernández, E., Ruiz-Hidalgo, J. F., & Rico, L. (2019). Meaning and Understanding of School Mathematical Concepts by Secondary Students: The Study of Sine and Cosine. *Eurasia Journal of Mathematics, Science and Technology Education*, 15(12), 1–18. <https://doi.org/10.29333/ejmste/110490>
- Merry, M. S. (2020). Can Schools Teach Citizenship? *Discourse: Studies in the*

Cultural Politics of Education, 41(1), 124–138.
<https://doi.org/10.1080/01596306.2018.1488242>

- Mitchell, L. (2019). Democratic Policies and Practices in Early Childhood Education. In *An Aotearoa New Zealand Case Study* (Vol. 24). Springer Singapore. <https://doi.org/10.1007/978-981-13-1793-4>
- Mohamadi Zenouzagh, Z. (2019). The effect of online summative and formative teacher assessment on teacher competences. *Asia Pacific Education Review*, 20(3), 343–359. <https://doi.org/10.1007/s12564-018-9566-1>
- Montague, M., Enders, C., & Dietz, S. (2011). Effects of Cognitive Strategy Instruction on Math Problem Solving of Middle School Students with Learning Disabilities. *Learning Disability Quarterly*, 34(4), 262–272. <https://doi.org/10.1177/0731948711421762>
- Montague, M., Krawec, J., Enders, C., & Dietz, S. (2014). The Effects of Cognitive Strategy Instruction on Math Problem Solving of Middle-School Students of Varying Ability. *Journal of Educational Psychology*, 106(2), 469–481. <https://doi.org/10.1037/a0035176>
- Morin, L. L., Watson, S. M. R., Hester, P., & Raver, S. (2017). The Use of a Bar Model Drawing to Teach Word Problem Solving to Students with Mathematics Difficulties. *Learning Disability Quarterly*, 40(2), 91–104. <https://doi.org/10.1177/0731948717690116>
- Mostert, I. (2019). Distribution OF Additive Relation Word Problems in South African Early Grade Mathematics Workbooks. *South African Journal of Childhood Education*, 9(1), 1–12. <https://doi.org/10.4102/sajce.V9i1.655>
- Moussa-Inaty, J., Causapin, M., & Groombridge, T. (2020). Does Language Really Matter When Solving Mathematical Word Problems in A Second Language? A Cognitive Load Perspective. *Educational Studies*, 46(1), 18–38. <https://doi.org/10.1080/03055698.2018.1516629>
- Mukhopadhyay, R. (2013). Problem Solving In Science Learning - Some Important Considerations of a Teacher. *IOSR Journal Of Humanities And Social Science*, 8(6), 21–25. <https://doi.org/10.9790/0837-0862125>
- Mulyati, T. (2016). Kemampuan Pemecahan Masalah Matematis Siswa Sekolah Dasar. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, 3(2), 1–15. <https://doi.org/10.17509/eh.v3i2.2807>
- Musselwhite, D. J., & Wesolowski, B. C. (2018). Evaluating the Psychometric Qualities of a Rating Scale to Assess Pre-Service Teachers' Lesson Plan Development in the Context of a Secondary-Level Music Performance Classroom. *Journal of Research in Music Education*, 66(3), 338–358. <https://doi.org/10.1177/0022429418793645>
- Mwadzaangati, L., & Kazima, M. (2019). An Exploration of Teaching for Understanding the Problem for Geometric Proof Development : The Case of Two Secondary School Mathematics Teachers An Exploration of Teaching for Understanding the Problem for Geometric Proof Development : The Case of

- Two Sec. *African Journal of Research in Mathematics, Science and Technology Education*, 23(3), 298–308. <https://doi.org/10.1080/18117295.2019.1685221>
- Namkung, J. M., Peng, P., & Lin, X. (2019). The Relation Between Mathematics Anxiety and Mathematics Performance Among School-Aged Students: A Meta-Analysis. *Review of Educational Research*, 89(3), 459–496. <https://doi.org/10.3102/0034654319843494>
- Napitupulu, E. E., & Mansyur, A. (2015). Kemampuan Pemecahan Masalah Dan Kemampuan (Studi Kasus di SMA Negeri Parongpong Kabupaten Bandung Barat). *Jurnal Formatif*, 4(1), 139–148. jurnal.unimed.ac.id
- Nasution, T. K., & Sinaga, B. (2017). Development of Student Worksheet Geometry Based Metacognitive Strategy Through Creative Thinking Ability. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 7(4), 10–18. <https://doi.org/10.9790/7388-0704041018>
- National Council of Teacher Mathematics. (2010). *Why is Teaching with Problem Solving Important to Student Learning?* National Council of Teachers of Mathematics.
- National Council of Teachers Mathematics. (2000). Principles and Standards of School Mathematics. In *NCTM*. NCTM. [https://doi.org/10.1016/s0737-0806\(98\)80482-6](https://doi.org/10.1016/s0737-0806(98)80482-6)
- Novitasari, D. (2016). Pengaruh Penggunaan Multimedia Interaktif Terhadap Kemampuan Pemahaman Konsep Matematis Siswa. *Fibonacci: Jurnal Pendidikan Matematika Dan Matematika*, 2(2), 8–18. <https://doi.org/10.24853/fbc.2.2.8-18>
- Nurhasanah. (2018). Pengembangan Tes untuk Mengukur Kemampuan Penalaran Mahasiswa Mata Kuliah Geometri. *Jurnal Pendidikan PEPATUDZU: Media Pendidikan Dan Sosial Kemasyarakatan*, 14(1), 62–73. <https://doi.org/10.35329/fkip.v14i1.186>
- Obara, S. (2018). Find the Dimensions: Students Solving a Tiling Problem. *Australian Mathematics Teacher*, 74(1), 31–37. <http://www.aamt.edu.au>
- Öçal, M. F., Şen, C., Güler, G., & Kar, T. (2020). The Investigation of Prospective Mathematics Teachers' Non-Algebraic Solution Strategies for Word Problems. *International Journal of Mathematical Education in Science and Technology*, 51(4), 563–584. <https://doi.org/10.1080/0020739X.2019.1597936>
- Okafor, T. U. (2019). Effect of Polya's Problem Solving Technique on The Academic Achievement of Senior Secondary School Student In Physics. *European Journal of Physics Education*, 10(1), 38–48. <https://doi.org/10.20308/ejpe.v10i1.233>
- Ökmen, B., Şahİn, Ş., Kiliç, A., & A, A. (2020). A Critical View To The Primary School Teaching To cite this article : A Critical View To The Primary School Teaching Abstract. *International Journal of Contemporary Educational*

Research, 7(1), 54–70. <https://doi.org/10.33200/ijcer.633051>

- Olaniyan, A. O., Esther, O., & Nwankwo, L. (2015). Effect of Polya Problem-solving Model on Senior Secondary School Students' Performance in Current Electricity. *European Journal of Science and Mathematics Education*, 3(1), 97–104. <http://www.scimath.net>
- Olayinka, A.-R. B. (2016). Effects of Instructional Materials on Secondary Schools Students' Academic Achievement in Social Studies in Ekiti State, Nigeria. *World Journal of Education*, 6(1), 32–39. <https://doi.org/10.5430/wje.v6n1p32>
- Oliver, D. L. (2018). Two Simple and Inexpensive Desk-Top Experiments with Vibrations of a Uniform Beam. *The Physics Teacher*, 56(8), 548–550. <https://doi.org/10.1119/1.5064570>
- Osman, S., Nurul, C., Che, A., Abu, M. S., & Ismail, N. (2018). *Enhancing Students' Mathematical Problem-Solving Skills through Bar Enhancing Students' Mathematical Problem-Solving Skills through Bar Model Visualisation Technique*. 13(3), 273–279. <https://doi.org/10.12973/iejme/3919>
- Pardimin, P., & Widodo, S. A. (2016). Increasing Skills of Student in Junior High School to Problem Solving in Geometry With Guided. *Journal of Education and Learning (EduLearn)*, 10(4), 390–395. <https://doi.org/10.11591/edulearn.v10i4.3929>
- Pasnak, R., Schmerold, K. L., Robinson, M. F., Gadzichowski, M., Bock, A. M., Brien, S. E. O., Kidd, J. K., Gallington, D. A., Pasnak, R., Schmerold, K. L., Robinson, M. F., Gadzichowski, M., Bock, A. M., Brien, S. E. O., Kidd, J. K., & Gallington, D. A. (2016). Understanding Number Sequences Leads to Understanding Mathematics Concepts. *The Journal of Educational Research*, 109(6), 640–646. <https://doi.org/10.1080/00220671.2015.1020911>
- Patnani, M. (2013). Upaya Meningkatkan Kemampuan Problem Solving pada mahasiswa. *Jurnal Psikogenesis*, 1(2), 185–198. <https://doi.org/10.24854/jps.v1i2.43>
- Peranginangin, S. A., Saragih, S., & Siagian, P. (2019). Development of Learning Materials through PBL with Karo Culture Context to Improve Students' Problem Solving Ability and Self-Efficacy. *International Electronic Journal of Mathematics Education*, 14(2), 265–274. <https://doi.org/10.29333/iejme/5713>
- Pfannenstiel, K. H., Bryant, D. P., Bryant, B. R., & Porterfield, J. A. (2015). Cognitive Strategy Instruction for Teaching Word Problems to Primary-Level Struggling Students. *Intervention in School and Clinic*, 50(5), 291–296. <https://doi.org/10.1177/1053451214560890>
- Phonapichat, P., Wongwanich, S., & Sujiva, S. (2014). An Analysis of Elementary School Students' Difficulties in Mathematical Problem Solving. *Procedia - Social and Behavioral Sciences*, 116(1), 3169–3174. <https://doi.org/10.1016/j.sbspro.2014.01.728>

- Polotskaia, E., & Savard, A. (2018). Using the Relational Paradigm: Effects on Pupils' Reasoning in Solving Additive Word Problems. *Research in Mathematics Education*, 20(1), 70–90. <https://doi.org/10.1080/14794802.2018.1442740>
- Pongsakdi, N., Laakkonen, E., Laine, T., Veermans, K., Hannula-Sormunen, M. M., & Lehtinen, E. (2019). The Role of Beliefs and Motivational Variables in Enhancing Word Problem Solving. *Scandinavian Journal of Educational Research*, 63(2), 179–197. <https://doi.org/10.1080/00313831.2017.1336475>
- Pongsakdi, N., Laine, T., Veermans, K., Hannula-Sormunen, M. M., & Lehtinen, E. (2016). Improving Word Problem Performance in Elementary School Students by Enriching Word Problems Used in Mathematics Teaching. *NOMAD, Nordic Studies in Mathematics Education*, 21(2). <http://ncm.gu.se/nomad>
- Powell, S. R., & Fuchs, L. S. (2018). Effective Word-Problem Instruction: Using Schemas to Facilitate Mathematical Reasoning. *Teaching Exceptional Children*, 51(1), 31–42. <https://doi.org/10.1177/0040059918777250>
- Powell, S. R., Fuchs, L. S., Cirino, P. T., Fuchs, D., Compton, D. L., & Changas, P. C. (2015). Effects of a Multitier Support System on Calculation, Word Problem, and Prealgebraic Performance Among At-Risk Learners. *Exceptional Children*, 81(4), 443–470. <https://doi.org/10.1177/0014402914563702>
- Pulliam, N., & Bartek, S. (2017). College and career readiness in elementary schools. *International Electronic Journal of Elementary Education*, 10(3), 355–360. <https://doi.org/10.26822/iejee.2018336193>
- Purnama, M. D., Irawan, E. B., & Sa'dijah, C. (2017). Pengembangan Media Box Mengenai Bilangan Dan Operasi Bagi Sswa Kelas 1 Di SDN GADANG 1 KOTA MALANG. *Kajian Pembelajaran Matematika*, 1(1), 46–51. <http://journal2.um.ac.id/index.php/jkpm>
- Purpura, D. J., Napoli, A. R., Wehrspann, E. A., & Gold, Z. S. (2017). Causal Connections Between Mathematical Language and Mathematical Knowledge: A Dialogic Reading Intervention. *Journal of Research on Educational Effectiveness*, 10(1), 116–137. <https://doi.org/10.1080/19345747.2016.1204639>
- Putro, S. E., Sukirno, S., S., B., & W., D. (2016). Improvement of Human Resources Quality through Vocational Training in Tourism in Karimunjawa Islands (Central Java, Indonesia): A Pro-Economical Tourism Approach. *International Education Studies*, 9(8), 28–35. <https://doi.org/10.5539/ies.v9n8p28>
- Radovan, M., & Perdih, M. (2016). Developing Guidelines for Evaluating the Adaptation of Accessible Web-Based Learning Materials. *International Review of Research in Open and Distance Learning*, 17(4), 166–181. <https://doi.org/10.19173/irrodl.v17i4.2463>

- Raduan, I. H. (2010). Error Analysis and The Corresponding Cognitive Activities Committed by Year Five Primary Students in Solving Mathematical Word Problems. *Procedia - Social and Behavioral Sciences*, 2(2), 3836–3838. <https://doi.org/10.1016/j.sbspro.2010.03.600>
- Rahayuningsih, P., & Qohar, A. (2014). Error Analysis in Solving Word Problem about Two Variable Linear Equations and Its Scaffolding Based on Newman Error Analysis on Students Grade VII of Malang State Junior High School. *Jurnal Pendidikan Matematika Dan Sains*, 2(2), 109–116. <https://doi.org/10.21831/jpms.v4i2.7161>
- Rahman, H., Suryadi, D., & Rosjanuardi, R. (2017). Epistemological Obstacles Experienced by Indonesian Students in Answering Mathematics PISA Test on the Content Uncertainty and Data. *International Journal of Science and Applied Science: Conference Series*, 2(1), 122. <https://doi.org/10.20961/ijssacs.v2i1.16694>
- Rahmawati, D., & Permata, L. D. (2018). Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Program Linear Dengan Prosedur Newman. *Jurnal Elektronik Pembelajaran Matematika*, 5(2), 173–185. <http://jurnal.uns.ac.id/jpm>
- Reed, W., Clark, D., Nordstrom, T., & Siegel, D. (2016). Bargaining in The Shadow of A Commitment Problem. *Research and Politics*, 3(3). <https://doi.org/10.1177/2053168016666848>
- Rehman, T., Khan, S., Hwang, G. J., & Abbas, M. A. (2019). Automatically Solving Two-Variable Linear Algebraic Word Problems Using Text Mining. *Expert Systems*, 36(2), 1–11. <https://doi.org/10.1111/exsy.12358>
- Reikerås, E., Moser, T., & Tønnessen, F. E. (2017). Mathematical Skills and Motor Life Skills in Toddlers: Do Differences in Mathematical Skills Reflect Differences in Motor Skills? *European Early Childhood Education Research Journal*, 25(1), 72–88. <https://doi.org/10.1080/1350293X.2015.1062664>
- Rindarti, E. (2018). Improvement Teacher Competence in Developing RPP on The 2013 Curriculum 2017 Revision Through Accompaniment of Sustained in Ma Target Central Jakarta Town Lesson 2017/2018. *Jurnal Pusat Penelitian Kebijakan Pendidikan Dan Kebudayaan*, 11(2), 1–19. <https://jurnalpuslitjakdikbud.kemdikbud.go.id/>
- Roesler, R. A. (2016). Toward Solving the Problem of Problem Solving: An Analysis Framework. *Journal of Music Teacher Education*, 26(1), 28–42. <https://doi.org/10.1177/1057083715602124>
- Ross, R., Brown, P., & Biagas, K. H. (2020). Creating Equitable School Climates. *State Education Standard*, 20(2), 17–22. <https://www.nasbe.org/category/the-standard/>
- Rubel, D., & Okech, J. E. A. (2017). Qualitative Research in Group Work: Status, Synergies, and Implementation. *Journal for Specialists in Group Work*, 42(1), 54–86. <https://doi.org/10.1080/01933922.2016.1264522>

- Sahyar, & Fitri, R. Y. (2017). The Effect of Problem-Based Learning Model (PBL) and Adversity Quotient (AQ) on Problem-Solving Ability. *American Journal of Educational Research*, 5(2), 179–183. <https://doi.org/10.12691/education-5-2-11>
- Saifulloh, M., Muhibbin, Z., & Hermanto, H. (2012). Strategi Peningkatan Mutu Pendidikan Di Sekolah. *Jurnal Sosial Humaniora*, 5(2), 206–218. <https://doi.org/10.12962/j24433527.v5i2.619>
- Salado, A., Chowdhury, A. H., & Norton, A. (2019). Systems Thinking and Mathematical Problem Solving. *School Science and Mathematics*, 119(1), 49–58. <https://doi.org/10.1111/ssm.12312>
- Saleh, M. (2013). Strategi Pembelajaran Fiqh dengan Problem-Based Learning. *Jurnal Ilmiah Didaktika*, XIV(1), 190–220. <https://doi.org/10.22373/jid.v14i1.497>
- Saminathen, M. G., Låftman, S. B., & Almquist, Y. B. (2018). Effective Schools, School Segregation, and The Link with School Achievement. *School Effectiveness and School Improvement*, 00(00), 1–21. <https://doi.org/10.1080/09243453.2018.1470988>
- Sari, A., Suryadi, D., & Syaodih, E. (2018). A professional learning community model: A case study of primary teachers community in west Bandung. *Journal of Physics: Conference Series*, 1013(1), 012122. <https://doi.org/10.1088/1742-6596/1013/1/012122>
- Sarstedt, M., Bengart, P., Shaltoni, A. M., & Lehmann, S. (2017). The use of sampling methods in advertising research: a gap between theory and practice. *International Journal of Advertising*, 37(4), 650–663. <https://doi.org/10.1080/02650487.2017.1348329>
- Sartono, & Karso. (2020). Are the Fractions Difficult? A case study at Elementary School 033 Asmi. *The 2nd International Conference on Elementary Education*, 2, 1029–1043. <http://proceedings2.upi.edu/index.php/icee/article/view/714>
- Scheibling-Sève, C., Pasquinelli, E., & Sander, E. (2020). Assessing Conceptual Knowledge through Solving Arithmetic Word Problems. *Educational Studies in Mathematics*, 103(3), 293–311. <https://doi.org/10.1007/s10649-020-09938-3>
- Schoevers, E. M., Kroesbergen, E. H., & Kattou, M. (2018). Mathematical Creativity : A Combination of Domain- general Creative and Domain-specific Mathematical Skills. *JCB: The Journal of Creative Behavior*, 54(2), 242–252. <https://doi.org/10.1002/jocb.361>
- Seitz, S. (2016). Pixilated Partnerships, Overcoming Obstacles in Qualitative Interviews Via Skype: A Research Note. *Qualitative Research*, 16(2), 229–235. <https://doi.org/10.1177/1468794115577011>
- Semingson, P., Pole, K., & Tommerdahl, J. (2015). Using bilingual Books to Enhance Literacy Around the World. *European Scientific Journal*, 11(6), 132–

139. <https://doi.org/10.13140/RG.2.1.1577.4562>

- Shanley, L., Clarke, B., Doabler, C. T., Kurtz-nelson, E., & Fien, H. (2017). Early Number Skills Gains and Mathematics Achievement : Intervening to Establish Successful Early Mathematics Trajectories. *The Journal of Special Education*, 51(3), 1–12. <https://doi.org/10.1177/0022466917720455>
- Sharp, E., & Dennis, M. S. (2016). Model Drawing Strategy for Fraction Word Problem Solving of Fourth-Grade Students With Learning Disabilities. *Remedial and Special Education*, 38(3), 181–192. <https://doi.org/10.1177/0741932516678823>
- Shin, M., & Bryant, D. P. (2017). Improving the Fraction Word Problem Solving of Students With Mathematics Learning Disabilities: Interactive Computer Application. *Remedial and Special Education*, 38(2), 76–86. <https://doi.org/10.1177/0741932516669052>
- Sholekah, L. M., Anggreini, D., & Waluyo, A. (2017). Analisis Kesulitan Siswa Dalam Menyelesaikan Soal Matematika Ditinjau Dari Koneksi Matematis Materi Limit Fungsi. *WACANA AKADEMIKA: Majalah Ilmiah Kependidikan*, 1(2), 151–164. <https://doi.org/10.30738/wa.v1i2.1413>
- Sholiha, S. Z., & Afriansyah, E. A. (2017). Students' Difficulties Analysis in Problem Solving Process of Geometry Based on Van Hiele Thinking Stages. *Mosharafa: Jurnal Pendidikan Matematika*, 6(2), 287–298. <https://doi.org/10.31980/mosharafa.v6i2.317>
- Siagian, M. D. (2016). Kemampuan Koneksi Matematik Dalam Pembelajaran Matematika. *MES (Journal of Mathematics Education and Science)*, 2(1), 58–67. <https://doi.org/10.30743/mes.v2i1.117>
- Siagian, M. V., Saragih, S., & Sinaga, B. (2019). Development of Learning Materials Based on Realistic Mathematics Education Approach to Improve Students' Mathematical Problem Solving Ability and Self-Efficacy. *International Electronic Journal of Mathematics Education*, 14(2), 331–340. <https://doi.org/10.29333/iejme/5721>
- Sicat, L. V., & David, M. E. D. (2016). Performance in Basic Mathematics of Indigenous Students. *Universal Journal of Educational Research*, 4(2), 320–325. <https://doi.org/10.13189/ujer.2016.040202>
- Sikora, J., & Pitt, D. G. W. (2019). Does Advanced Mathematics Help Students Enter University More Than Basic Mathematics? Gender and Returns to Year 12 Mathematics in Australia. *Mathematics Education Research Journal*, 31(2), 197–218. <https://doi.org/10.1007/s13394-018-0249-3>
- Silaban, W., Ambarita, B., & Hadi, U. (2018). The Development and Implementation of Learning Material on Exposition Text to Improve Students' Achievement on Bahasa Indonesia. *International Education Studies*, 11(11), 53–61. <https://doi.org/10.5539/ies.v11n11p53>
- Situmorang, R. (2016). Analisis Potensi Lokal untuk Mengembangkan Bahan Ajar Biologi di SMA Negeri 2 Wonosari. *Jurnal Pendidikan Sains*, 4(1), 51–57.

<https://doi.org/10.26714/jps.4.1.2016.51-57>

- Suandito, B. (2017). Bukti Informal Dalam Pembelajaran Matematika. *Al-Jabar : Jurnal Pendidikan Matematika*, 8(1), 13–24. <https://doi.org/10.24042/ajpm.v8i1.1160>
- Subroto, T., & Suryadi, D. (2018). Epistemological Obstacles in Mathematical Abstraction on Abstract Algebra. *Journal of Physics: Conference Series*, 1132(1), 012032. <https://doi.org/10.1088/1742-6596/1132/1/012032>
- Sudirman. (2017). Efforts to Improve Teacher Competence in Developing a Lesson Plan through Sustainable Guidance in SMKN 1 Mamuju. *Journal of Education and Practice*, 8(5), 114–119. www.iiste.org
- Sugiman. (2008). Koneksi Matematik Dalam Pembelajaran Matematika Di Sekolah Menengah Pertama. *Pythagoras - Jurnal Pendidikan Matematika*, 4(1), 56–67. <https://doi.org/10.21831/pg.v4i1.687>
- Sukoriyanto, S., Nusantara, T., Subanji, S., & Chandra, T. D. (2016). Students' Errors in Solving the Permutation and Combination Problems Based on Problem Solving Steps of Polya. *International Education Studies*, 9(2), 11–16. <https://doi.org/10.5539/ies.v9n2p11>
- Summer, A. (2020). Entrepreneurship Education in Mathematics Education for Future Primary School Teachers. *Discourse and Communication for Sustainable Education*, 10(2), 89–99. <https://doi.org/10.2478/dcse-2019-0020>
- Suryadi, D. (2013). Didactical Design Research (DDR) dalam Pengembangan Pembelajaran Matematika. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika*, 1, 3–12.
- Susilowati, I., Sutanto, H. A., & Daharti, R. (2013). Strategi Peningkatan Kompetensi Guru Dengan Pendekatan Analysis Hierarchy Process. *JEJAK: Journal of Economics and Policy*, 6(1), 80–92. <https://doi.org/10.15294/jejak.v6i1.3750>
- Sutiarso, S., Coesamin, M., & Nurhanurawati. (2018). The Effect of Various Media Scaffolding on Increasing Understanding of Students' Geometry Concepts. *Journal on Mathematics Education*, 9(1), 95–102. <https://doi.org/10.22342/jme.9.1.4291.95-102>
- Swanson, H. L., Lussier, C. M., & Orosco, M. J. (2015). Cognitive Strategies, Working Memory, and Growth in Word Problem Solving in Children With Math Difficulties. *Journal of Learning Disabilities*, 48(4), 339–358. <https://doi.org/10.1177/0022219413498771>
- Syafii, W., & Yasin, R. M. (2013). Problem Solving Skills and Learning Achievements through Problem-Based Module in teaching and learning Biology in High. *Asian Social Science*, 9(12), 220–228. <https://doi.org/10.5539/ass.v9n12p220>
- Syaidah, U., Suyadi, B., & Ani, H. M. (2018). Pengaruh Kompetensi Guru Terhadap Hasil Belajar Ekonomi di SMA Negeri Rambipuji Tahun Ajaran

- 2017/2018. *Jurnal Pendidikan Ekonomi: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi, Dan Ilmu Sosial*, 12(2), 185–191. <https://doi.org/10.19184/jpe.v12i2.8316>
- Tabi'in, A. (2017). Kompetensi Guru dalam Meningkatkan Motivasi Belajar pada MTsN Pekan Heran Indragri Hulu. *Jurnal Pendidikan Agama Islam Al-Thariqah*, 1(2), 156–171. [https://doi.org/10.25299/althariqah.2016.vol1\(2\).629](https://doi.org/10.25299/althariqah.2016.vol1(2).629)
- Timmerman, M. A. (2010). Making Connections: Elementary Teachers' Construction of Division Word Problems and Representations. *School Science and Mathematics*, 114(3), 114–124. <https://doi.org/10.1111/ssm.12059>
- Trein, P., Thomann, E., & Maggetti, M. (2019). Integration, Functional Differentiation and Problem-Solving in Multilevel Governance. *Public Administration*, 97(2), 339–354. <https://doi.org/10.1111/padm.12595>
- Ulandari, L., Amry, Z., & Saragih, S. (2019). Development of Learning Materials Based on Realistic Mathematics Education Approach to Improve Students' Mathematical Problem Solving Ability and Self-Efficacy. *International Electronic Journal of Mathematics Education*, 14(2), 375–383. <https://doi.org/10.29333/iejme/5729>
- Umam, M. D. (2014). Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Matematika Materi Operasi Hitung Pecahan. *MATHEdunesa*, 3(3), 131–134. <http://matematika.fmipa.unesa.ac.id/mathedunesa>
- van de Grift, W. J. C. M., Houtveen, T. A. M., van den Hurk, H. T. G., & Terpstra, O. (2019). Measuring Teaching Skills in Elementary Education Using the Rasch Model. *School Effectiveness and School Improvement*, 30(4), 455–486. <https://doi.org/10.1080/09243453.2019.1577743>
- Van Den Broeck, L., Laet, T. De, Lacante, M., & Pinxten, M. (2019). The Effectiveness of A MOOC in Basic Mathematics and Time Management Training for Transfer Students in Engineering. *European Journal of Engineering Education*, 45(4), 534–549. <https://doi.org/10.1080/03043797.2019.1641692>
- Van der Beek, J. P. J., Van der Ven, S. H. G., Kroesbergen, E. H., & Leseman, P. P. M. (2017). Self-Concept Mediates the Relation Between Achievement and Emotions in Mathematics. *British Journal of Educational Psychology*, 87(3), 478–495. <https://doi.org/10.1111/bjep.12160>
- van Garderen, D., & Scheuermann, A. M. (2015). Diagramming Word Problems: A Strategic Approach for Instruction. *Intervention in School and Clinic*, 50(5), 282–290. <https://doi.org/10.1177/1053451214560889>
- Varanis, M., & Mereles, A. (2017). Mathematical Model of a Vehicle Crash: A Case Study. *International Journal of Mechanical Engineering Education*, 45(1), 89–100. <https://doi.org/10.1177/0306419016669037>
- Verschaffel, L., Schukajlow, S., Star, J., & Van Dooren, W. (2020). Word Problems in Mathematics Education: A Survey. *ZDM: The International Journal on*

- Mathematics Education*, 52(1), 1–16. <https://doi.org/10.1007/s11858-020-01130-4>
- Verschaffel, L., van Dooren, W., Greer, B., & Mukhopadhyay, S. (2010). Reconceptualising Word Problems as Exercises in Mathematical Modelling. *Journal Fur Mathematik-Didaktik*, 31(1), 9–29. <https://doi.org/10.1007/s13138-010-0007-x>
- Vilianti, Y. C., Pratama, F. W., & Mampouw, H. L. (2018). Description of The Ability of Social Arithedical Stories by Study Problems by Students VIII SMP Reviewed from The Polya Stage. *International Journal of Active Learning*, 3(1), 23–32. <https://doi.org/10.15294/ijal.v3i1.10882>
- Vnouckova, L., Urbancova, H., & Smolova, H. (2015). Factor Describing Students Perception On Education Quality Standars. *Jurnal on Efficiency and Responsibility in Education and Science*, 10(4), 109–115. <https://doi.org/10.7160/eriesj.2017.100403.Introduction>
- Vula, E., Avdyli, R., Berisha, V., Saqipi, B., & Elezi, S. (2017). The Impact of Metacognitive Strategies and Self-Regulating Processes of Solving Math Word Problems. *International Electronic Journal of Elementary Education*, 10(1), 49–59. <https://doi.org/10.26822/iejee.2017131886>
- Wahyuddin, W. (2017). Headmaster Leadership and Teacher Competence in Increasing Student Achievement in School. *International Education Studies*, 10(3), 215–226. <https://doi.org/10.5539/ies.v10n3p215>
- Wahyuningrum, A. S., Suryadi, D., & Turmudi. (2017). Epistemological Obstacles on the Topic of Ratio and Proportion among Junior High School Students. *Journal of Physics: Conference Series*, 895(1), 012066. <https://doi.org/10.1088/1742-6596/895/1/012066>
- Walle, J. A. Van de, Karp, K. S., & Bay-Williams, J. M. (2010). Elementary and Middle School Mathematics: Teaching Developmentally. In *Allyn and Bacon* (7th ed.). [https://doi.org/10.1016/0005-1098\(86\)90018-X](https://doi.org/10.1016/0005-1098(86)90018-X)
- Wang, X., Li, G., Yang, L., & Lin, H. (2016). Groups With Two Generators Having Unsolvble Word Problem and Presentations of Mihailova Subgroups of Braid Groups. *Communications in Algebra*, 44(7), 3020–3037. <https://doi.org/10.1080/00927872.2015.1065867>
- Wares, A. (2018). An Interesting Property of Hexagons. *International Journal of Mathematical Education in Science and Technology*, 49(3), 437–441. <https://doi.org/10.1080/0020739X.2017.1387298>
- Wares, A. (2019). An Unexpected Property of Quadrilaterals. *International Journal of Mathematical Education in Science and Technology*, 50(2), 315–321. <https://doi.org/10.1080/0020739X.2018.1472820>
- Weller, S. (2017). Using Internet Video Calls in Qualitative (Longitudinal) Interviews: Some Implications for Rapport. *International Journal of Social Research Methodology*, 20(6), 613–625. <https://doi.org/10.1080/13645579.2016.1269505>

- Widodo, S. A., Darhim, & Ikhwanudin, T. (2018). Improving Mathematical Problem Solving Skills through Visual Media. *IOP Conf. Series: Journal of Physics: Conf. Series*, 948(1), 1–7. <https://doi.org/10.1088/1742-6596/948/1/012004>
- Wiltshire, T. J., Butner, J. E., & Fiore, S. M. (2018). Problem-Solving Phase Transitions During Team Collaboration. *Cognitive Science*, 42(1), 129–167. <https://doi.org/10.1111/cogs.12482>
- Winarsih, S. (2017). Kebijakan dan Implementasi Manajemen Pendidikan Tinggi dalam Meningkatkan Mutu Pendidikan. *Cendekia: Journal of Education and Society*, XV(1), 51–66. <https://doi.org/10.21154/cendekia.v15i2.1005>
- Wise, S. L., Kuhfeld, M. R., & Soland, J. (2019). The Effects of Effort Monitoring With Proctor Notification on Test-Taking Engagement, Test Performance, and Validity. *Applied Measurement in Education*, 32(2), 183–192. <https://doi.org/10.1080/08957347.2019.1577248>
- Xie, P., Peng, Y., Hu, J., & Yi, S. (2019). A Study on the Effect of Ligament and Tendon Detachment on Human Middle Ear Sound Transfer Using Mathematic Model. *Journal of Engineering in Medicine*, 233(8), 784–792. <https://doi.org/10.1177/0954411919853364>
- Yakubova, G., & Taber-doughty, T. (2015). Improving Problem-Solving Performance of Students With Autism Spectrum Disorders. *Focus on Autism and Other Developmental Disabilities*, 32(1), 1–15. <https://doi.org/10.1177/1088357615587506>
- Yeni, E. M. (2015). Kesulitan Belajar Matematika di Sekolah Dasar. *Jurnal Pendidikan Dasar*, 2(2), 1–10. <http://journal.unj.ac.id/>
- Yeni, E. M., Wahyudin, & Herman, T. (2020). Difficulty Analysis of Elementary School Students in Mathematical Problem Solving in Solutions. *International Journal of Scientific and Technology Research*, 9(3), 44–47. <http://www.ijstr.org/>
- Yonkaitis, C. F. (2020). Lesson Plan Basics: Teaching in the Classroom With Confidence. *NASN School Nurse (Print)*, 35(3), 136–139. <https://doi.org/10.1177/1942602X19893038>
- Yurniwati, & Hanum, L. (2017). Improving Mathematics Achievement of Indonesian 5 Th. *Journal on Mathematics Education*, 8(1), 77–84. <https://doi.org/10.22342/jme.8.1.3209.77-84>
- Yuwono, A. (2016). Problem Solving dalam Pembelajaran Matematika. *UNION: Jurnal Pendidikan Matematika*, 4(1), 143–156. <https://doi.org/10.30738/.v4i1.420>
- Zheng, H. (2020). Stakeholder Perceptions on the Role of School Inspection Standards in Demonstrating Education Quality in China. *Quality Assurance in Education*, 28(2), 105–121. <https://doi.org/10.1108/QAE-09-2019-0093>
- Zurqoni, Retnawati, H., Arlinwibowo, J., & Apino, E. (2018). Strategy and

Implementation of Character Education in Senior High Schools and Vocational High Schools. *Journal of Social Studies Education Research*, 9(3), 370–397. <https://doi.org/10.17499/jsser.01008>